

REMARKS

Applicant and Applicant's representative are grateful for the courtesy extended by Examiner Nguyen to discuss the pending claims of the current application. Although a resolution was not reached, the discussions between Applicant's representative and Examiner Nguyen was helpful for this Response.

Claims 21, 27 and 47-58 stand rejected. Claims 21, 27, 47, 48, 49, and 51-58 have been amended. No new matter has been introduced. Claim 50 has been canceled. Claims 21, 27, 47, 48, 49, and 51-58 are currently pending.

Claims 21, 27, 47, 49, 53 and 55 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kochi (U.S. Patent No. 6,188,094) in view of Hsiao (U.S. Patent No. 6,821,810). The rejection is respectfully traversed.

As best understood by Applicant, Kochi teaches a solid-state image pickup device with convex microlenses 110 formed over an inter-lens layer 109 (*see* Kochi at FIG. 1) that the Office Action has alleged meets the second light conductor limitation of claim 21 (Office Action, pgs. 2-3). As best understood by Applicant, Hsiao teaches a CCD device having an overcoat layer 48 formed over convex microlenses 47 (*see* Hsiao at FIG. 5) that the Office Action alleges would be combinable with Kochi to allegedly meet the limitations of claim 21.

Claim 21 has been amended to recite an imager device comprising, among other things, "a second light conductor within each recess and over substantially planar surfaces formed between the concave recesses of [a] first light conductor, an upper surface of the second light conductor being substantially planar, and having a top surface of the imager device." The references cited, alone or in combination, fail to disclose this limitation. According to Kochi, "a round, convex microlens layer 110 ... is formed on the interlayer 109." (Kochi at 1:35-45 and FIG. 1). Kochi's microlens layer 110 is the topmost light conducting structure. Hsiao's overcoat layer 48 is the topmost light conducting structure.

During a telephonic discussion, Examiner Nguyen asserted that the removal of convex microlens 110 and (implicitly) passivation layer 111 would have been obvious. Even assuming that Examiner Nguyen had made a *prima facie* case of obviousness to make that assertion (which he did not have the opportunity to make due to the nature of the telephonic discussion), Applicant respectfully submits that the removal of convex microlens 110 passivation layer 111 would render Kochi's device unworkable. Kochi's convex microlens 110 are specifically provided to focus incident light onto the photoelectronic conversion element 102. (See Kochi at FIG. 1). Without convex microlens 110, light would not be focused on to Kochi's photoelectronic conversion element 102, and solid-state image pickup device would not be workable.

Accordingly, Applicant respectfully submits that claim 21 and its dependent claims 47, 48, 49 and 51 are allowable, and requests that the rejection be withdrawn.

Claim 27 is also not rendered obvious by the alleged combination. Claim 27 has been amended to recite an imaging device comprising, among other things, "a second light conductor within each recess and over [a] first light conductor, the second light conductor being coextensive with an adjacent second light conductor in at least a first plane and having a substantially planar surface, the second light conductor being the top surface of the imaging device." For the reasons discussed above with respect to claim 21, Applicant respectfully submits that claim 27 and its dependent claims 50, 53, 54 and 55 are allowable, and requests that the rejection be withdrawn.

Claims 48, 50, and 54 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over figure 1 of Kochi and Hsaio in further view of figure 3A of Kochi. Applicant respectfully traverses the rejection.

Claim 48 depends from claim 21, and is allowable over Kochi and Hsaio for at least the reasons set forth above with respect to claim 21 and on its own merits. Claim 54 depends from claim 27, and is allowable over Kochi and Hsaio for at least the reasons set forth above with respect to claim 27 and on their own merits. Claim 50 has been canceled. Applicant respectfully requests that the rejection of claims 48 and 54 be withdrawn and the claims allowed.

Claim 51 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Kochi and Hsaio in view of alleged Acknowledged Prior Art (“APA”). Applicant respectfully traverses the rejection.

Claim 51 depends from claim 21, and is allowable over Kochi for at least the reasons set forth above with respect to claim 21 and on its own merits. Accordingly, Applicant respectfully requests that the rejection of claim 51 be withdrawn and the claim allowed.

Claims 52, 56 and 58 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kochi. Applicant respectfully traverses the rejection.

Claim 52 recites an imager device comprising, among other things, “a second light conductor within each recess and over substantially planar surfaces formed between the concave recesses of the light conductor, the second light conductor being the top surface of the imager device, and wherein a portion of said second light conductor over said planar surface of said first light conductor has a thickness approximately equal to $\lambda/2 * N$, wherein λ refers to a particular wavelength of light entering the microlens, and N refers to an index of refraction associated with the second light conductor.”

The Office Action does not address the arguments made with respect to the patentability of claim 52 in the Amendment Accompanying Request for Continued Examination dated October 26, 2007. As discussed previously, the advantage of the claimed invention is that the portion of the second light conductor reduces crosstalk between adjacent pixel cells by spectral reflections. (¶ 0027).

Kochi does not disclose, teach, or suggest a microlens for reducing crosstalk, much less a “a portion of said second light conductor over said planar surface of said first light conductor has a thickness approximately equal to $\lambda/2 * N$, wherein λ refers to a particular wavelength of light entering the microlens, and N refers to an index of refraction associated with the second light conductor.” Indeed, the Office Action admits that Kochi only discloses that the first light conductor 108 “must have a certain thickness, not necessarily the claimed thickness.” (Office

Action at 6). Recognizing Kochi's deficiencies, the Office Action merely states that it would have been obvious to modify Kochi to allegedly arrive at the claimed invention; however, Kochi fails to even mention the problem of cross talk in pixel cells, and, therefore, one of ordinary skill in the art would not have been motivated to modify Kochi as alleged by the Office Action.

In addition, for the reasons discussed above with respect to claim 21, the references of record fail to disclose, teach, or suggest "a second light conductor within each recess and over substantially planar surfaces formed between the concave recesses of the light conductor, the second light conductor being the top surface of the imager device," as recited by claim 52. For at least these reasons, Applicant respectfully submits that claim 52 (and its dependent claims 56-58) are allowable over Kochi, and requests that the rejection be withdrawn.

Claim 57 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over figure 1 of Kochi in further view of figure 3A of Kochi. Applicant respectfully traverses the rejection.

Claim 57 depends from claim 52, and is allowable over Kochi for at least the reasons set forth above with respect to claim 52 and on its own merits.

In view of the above, Applicant believes the pending application is in condition for allowance.

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The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 04-1073, under Order No. M4065.0735/P735.

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Respectfully submitted,

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